Continue

Sfsu computer science roadmap

CSC 101 Computers for All (Items: 3) Comprehensive and basic overview of computers and their use for everyday tasks such as obtaining information, internet, writing, presentations, communication, web publishing, e-commerce, entertainment, calculation. You don't need any prior knowledge. CSC 110 Computational Thinking and Quantitative Thinking (Entities: 3) Basic building blocks of programming and computational thinking practices including analyzing impact calculation, creating computational objects using abstractions and models, analyzing problems and objects, transmitting processes and results, and working effectively with teams. Mathematical models and the collection of information from real-world databases are used as vehicles for practicing programming and calculation thinking. (Note: For this course to correspond to general education, students must earn grade C or CR or higher.) CSC 203 JAVA Programming (Items: 3) JAVA language and object-oriented programming. Use of inheritance, polymorphism, exception handling and libraries, and java applets and GUI development using swing. CSC 206 Python programming (units: 3) Python language programming with basic principles for interpretative languages. Use python basic structures and standard libraries, such as networking, regular expressions, GUI. Simple apps like www and games. CSC 208 C++ Java programmers (unit: 1) Practical exercises in C++ programming. Emphasis on common features of C++ and Java and unique features of C++. (cr/NC classes only) CSC 210 Introduction to Computer Programming (Items: 3) Design, Implementation, Testing, Debugging, Maintenance, and Documentation of Java Programs. Algorithms, programming concepts, and data types in Java. Object-oriented programming concepts. Numerical and non-numerical problems. CSC 211 Introduction Software Lab (Unit: 1) Hands-on exercises for programming, and the use of basic software development tools. Includes procedural, object-oriented, C++, and JAVA programs. Students are encouraged to bring their laptops. Action. A total of 3 units can be repeated. (cr/NC classes only) CSC 219 Data Structures For the Development of Data Science Applications (Entities: 3) focuses on the effective development of data structures and algorithms in the development and use of data structures and algorithms for the development of data science applications. Uses a Python and Jupyter notebook. CSC 220 Data structures (units: 3) Linear and non-linear data structures in Java, including lists, stacks, queues, trees, tables and graphs. Recursion, iteration of collections, sorting, searching, Big O-characters, and hash tables. CSC 221 Data Structure Lab (Unit: 1) Training principles for object-oriented programming, data structures (such as chimneys, queues, lists, trees, kits, HashMaps, etc.), and use to solve real-life problems, recursion and algorithm analysis. Action. (CAPITAL REQUIREMENTS Regulation/National Regulation/National only) CSC 230 discrete mathematical structures of Computer Science (Units: 3) Overview provided by algebra, relationships and functions, permutations, propositional logic, proof techniques, introduction to graph theory and infinite sets, and their applications in computer science. CSC 256 machine structures (units: 3) Digital logic circuits, data representation, assembly language programming, sub-routine linking, machine language encoding, interruption and exception handling, memory system concepts, and CPU management and performance. CSC 300GW Ethics, Communication and Tools for Software Development - GWAR (Entities: 3) Privacy, Security, Legal and Ethical Issues in Software Development. Communication from the Commission on development (e.g. reports, contracts, requirements, documentation, cooperation, e-mail, presentations). Explore and use the basic tools for the development and cooperation of SW. (ABC/NC classes only) CS306 Interdisciplinary approach to computer programming (Entities: 3) Basics of programming interdisciplinary problem solving. Topics include the main foundations of programming (variable, control report, iterative statement, array, function and abstraction) and problem-solving approaches. Inventor of the app and using Java. CSC 307 Interdisciplinary approach to web programming (Units: 3) Basics of WWW engineering relevant studies of interdisciplinary problem solving. Topics include the basics of developing web and database applications, HTML, PHP, Python, SQL and MySQL database. CSC 308 Introduction to Machine Learning Interdisciplinary Data Scientists (Units: 3) Introduction to basic machine learning concepts and tools. Focus on applying them to develop applications, linear model, deep neural network, and transfer learning using Python, Tensorflow, and Keras. (Only plus-minus class) CSC 309 Computer programming (units: 3) Procedural programming of scientific applications. Good programming practices and basic numerical and non-numerical algorithms for scientists and engineers. CSC 310 Computer Programming Lab (Unit: 1) Exercises Python programming and the use of basic software development tools. CSC 317 Introduction to web software development (entities: 3) Introduction to UNIX themes and creation of web pages, including reading and processing user input through web pages, client-side and server-side programming, connecting a web page to a database, and creating an e-commerce site or Internet application. CSC 340 Programming methodology (units: 3) Advanced data structures and algorithms for manipulation of C++ s with emphasis on design and implementation, practical applications and algorithms for sorting, searching and graphing. CSC 412 Advanced Software Lab (Unit: 1) Practical exercises in advanced programming, software and web technologies. Students are encouraged to bring their Action. A total of 2 units may be repeated. (Only plus-minus class) CSC 413 Software Development (Units: 3) Modern software applications. Object-oriented techniques: encapsulation, legacy and polymorphism as a mechanism for data design and problem solving. Software design, debugging, testing and user interface design. Software maintenance. Software development tools. A surcharge is required. (Only plus-minus class) CSC 415 Operating System Principles (Entities: 3) Operating System Definitions: Concurrent Processes, Basic Sync Techniques, Deadlock, Memory Management, File Systems, Security, Networks and Distributed Processing. A surcharge is required. CSC 510 Algorithms Analysis I (entities: 3) Definitions of the main algorithm design methods. The complexity dimensions of the algorithm in space and space. Classic problems, including sorting and timing such algorithms and analysis of complexity. CSC 520 Theory of Computing (Units: 3) Automata, official languages, and the concept of com calculateability. Successive machines as language acceptances. Contextless and context-sensitive grammar. Recursive features and universal turing machines. Unsolvable problems. CSC 600 Programming Paradigms and Languages (Items: 3) Definitions of high-level programming languages. Procedural, logical, functional, and object-oriented programming paradigms. Multi-language comparative study and introduction to grammar and parsing techniques. A surcharge is required. CSC 615 UNIX programming (Items: 3) Programming in a UNIX environment. Topics include regular expressions, utilities such as awk, sed, grep, csh, sh and ksh, system calls such as signals, sockets, POSIX IPC and POSIX threads and internal kernel structures. A surcharge is required. (Only plus-minus class) CSC 620 Natural Language Technologies (Units: 3) Natural language screening technology and grammar. Elements of computational romance, discourse structure and generation. Study of related topics, such as obtaining information, answering questions, machine translation, and speech processing. A surcharge is required. (Only plus-minus class) (CSC 820/CSC 620 is related to course offer. Students who complete the course at one level shall not repeat the course at another level.) CSC 621 Biomedical Imaging and Analysis (Entities: 3) Introduction to medical and biological imaging, imaging physics, 3D image formats and visualization. Digital image editing and analysis, filtering, registration, segmentation, quantification and performance evaluation. (Only plus-minus class) (CSC 821/CSC 621 is related to course offer. Students who complete the course at one level shall not repeat the course at another level.) CSC 630 Computer Graphics Systems Design (Units: 3) Graphics System Design and Display Hardware Architecture. Overview of device-independent graphics systems, 2- and view of conveyors, hidden line and surface removal algorithms, raster graphics techniques and color space models. Web page design and Flash exercises in the introduction of animation and multimedia. Course fee is required. (Only plus-minus class) CSC 631 Multiplayer game development (Items: 3) Computer graphics and network features of multiplayer games. Design and development of the game team project. (CSC 831/CSC 631 is related to course offer. Students who complete the course at one level shall not repeat the course at another level.) CSC 637 Software Techniques for Computer Music (Units: 3) Algorithms and software design for digital audio and computer music. Analytical and synthesis techniques. Real-time control and communication. A surcharge is required. CSC 641 Computer Performance Assessment (Items: 3) Computer performance analysis issues related to system design, selection, and setup. Modelling using models of stoic and operational queues. Methods for measuring workload characterisation, design and performance. Designing simulation models for computer systems. A surcharge is required. (Only plus-minus class) (CSC 841/CSC 641 is related to course offer. Students who complete the course at one level shall not repeat the course at another level.) CSC 642 Human-computer interaction (Units: 3) Design, implementation and evaluation of human and computer interfaces. Topics include interface devices, interface metaphors, communication styles, user-centered design, testing and quality assessment. A surcharge is required. (CSC 842/CSC 642 is related to course offer. Students who complete the course at one level shall not repeat the course at another level.) CSC 644 Computer measurements (units: 3) Software measurement and testing tools. Data collection and analysis. Web measurements. Compare and design benchmarks. Use of software monitors. A surcharge is required. (Only plus-minus class) CSC 645 Computer networks (units: 3) Computer network design, assessment and testing. Computer network standards and implementation. Hardware and software design and compatibility issues. A surcharge is required. CSC 648 Software Engineering (Units: 3) Practical methods and tools for SW engineering including organizational teamwork. (CSC 848/CSC 648 is related to course offer. Students who complete the course at one level shall not repeat the course at another level.) CSC 649 Search Engines (Items: 3) Introduction to indoor modern search engines. Methods and tools for reporting, store, and accessing text data. A surcharge is required. (Only plus-minus class) (CSC 849/CSC 649 is related to course offer. Students who complete the course at one level shall not repeat the course at another level.) CSC 651 System Management (Items: 3) User Management. Installation of the operating system, and control. Manage the network. Security control. Set up and control performance. A surcharge is required. (ABC/NC classes only) CSC 652 Introduction to security and data privacy (entities: 3) Introduction to basic concepts of cybersecurity, cryptography, and data privacy. Practice different privacy mechanisms in

databases and submit apps to many data analytics tasks. (CSC 852/CSC 652 [formerly CSC 650] is a paired course offer. Students who complete the course at one level shall not repeat the course at another level.) CSC 656 Computer Organization (units: 3) Design of the set of instructions. Pipelined datapath and control. Cache and memory system design. Input and output systems. Parallel processing. Software and hardware interactions. A surcharge is required. CSC 657 Bioinformatics Computing (Units: 3) a wide range of topics in computational biology such as practiced life sciences industry and leading research organizations. Provides the computational background necessary for participation in R&D. (CSC 857/CSC 657 is related to course offer. Students who complete the course at one level shall not repeat the course at another level.) CSC 658 Programming Cafe (Units: 3) Extensive programming practice to promote programming skills and processes, including a pair of programming exercises and code review techniques and practices. CSC 664 Multimedia Systems (Items: 3) Comprehensive themes of multimedia such as the basics of image and video processing, packing, multimedia databases, standard, synchronization, formats perspective systems and algorithms. A surcharge is required. (Only plus-minus class) (CSC 864/CSC 664 is related to course offer. Students who complete the course at one level shall not repeat the course at another level.) CSC 665 Artificial Intelligence (entities: 3) Overview of algorithms and approaches to Artificial Intelligence. Explore the basic concepts needed to achieve human-level intelligence in computer systems and gain experience in working with these concepts through tasks and programming exercises. Topics include problem-solving methods, heuristic search, game gaming, agent architecture, machine learning and various topics, selected knowledge representation, symbolic reasoning, computational models of virtual people, neural networks and genetic algorithms. A surcharge is required. (CSC 665/CSC 865 is related to course offer. Students who complete the course at one level shall not repeat the course at another level.) CSC 667 Internet Application Design and Development A surcharge is required. (CSC 867/CSC 667 is associated with course offer. Students who complete the course at one level shall not repeat the course at another level.) CSC 668 Advanced Object Oriented Software Design and Development 3) Object-oriented analysis and design using UML, design patterns, frameworks and toolkits. Agile software design processes. Development of a mid-sized team programming project. (Only plus-minus class) (CSC 868/CSC 668 is associated with course offer. Students who complete the course at one level shall not repeat the course at another level.) CSC 671 Neural Networks (Units: 3) Artificial neural networks, including associative memories, learning, search, databases, blurry set techniques, pattern recognition and adaptive processing. (CSC 871/CSC 671 is related to course offer. Students who complete the course at one level shall not repeat the course at another level.) CSC 675 Introduction to database systems (units: 3) Languages of the relation query. Semantic data models. Logical and physical database design. Privacy issues. Application techniques (directories, query optimization, competition control, security, and integrity enforcement). A surcharge is required. (CSC 775/CSC 675 is related to course offer. Students who complete the course at one level shall not repeat the course at another level.) CSC 676 Soft Computing and Decision Support Systems (Entities: 3) Developing software systems to support decisions, including applications on a soft COMPUTER. Topics include a vague set, vague logic, blurred systems, vague judgment, vague reasoning, approximate reasoning, possible theory, rough determination, sorted assessment logic, logic aggregation operators, information fusion models, decision-making methods, word data processing, perceptual calculation, granular calculation, and LSP method for evaluating and optimizing complex systems. (Only plus-minus class) (CSC 876/CSC 676 is related to course offer. Students who complete the course at one level shall not repeat the course at another level.) CSC 680 Developing applications for mobile devices (Items: 3) Introduction and comparison of different popular mobile app frameworks. Conceptual and practical experience in writing mobile applications using local and cross-platform tools. (Only plus-minus class) (CSC 780/CSC 680 is associated with course offer. Students who complete the course at one level shall not repeat the course at another level.) CSC 690 Interactive Multimedia Application Development (Units: 3) Basics of multimedia data formats and algorithms build applications using non-standard interfaces such as game controllers and multi-touch surfaces. (Only plus-minus class) CSC 693 Cooperative Education Program (Units: 6-12) Items are not counted toward the large. A total of 24 units may be repeated. For more information, please contact the Cooperation Representative. (cr/NC classes only) CSC 694 Cooperative Education: Computer Science (Entities: 1-3) Projects in business, government or industrial position for one semester. Within. repeat a total of 3 units. CSC 695 Computing community (entities: 2) Extensive field work training bay area nonprofits using computer tools such as conference and database systems. Development of user documentation. (cr/NC classes only) CSC 697 Senior Project in Computer Science (Units: 3) Culmination experience of individual design, implementation and professional documentation of the software product under close supervision by a faculty member. (Only plus-minus class) CSC 698 Computer themes (items: 3) Current themes of computer hardware and software technology. Topics to be specified in the class schedule. Can be repeated in a total of 9 units if the themes differ. CSC 699 Independent study (units: 1-3) Library and laboratory research and development projects. The supervisor must approve the final report and submit it to the department. A total of 9 units may be repeated. (Only plus-minus class) CSC 720 Advanced Operating Systems (Units: 3) Analysis of schedule and memory management algorithms and use of concurrent languages for the development of systems and distributed systems. Design and implementation of the main components of the operating system. A surcharge is required. CSC 730 Advanced Database Systems (entities: 3) Standard SQL, query optimization, concurrency control, crash recovery, authorization, and integrity enforcement. Object-oriented, extensible, deductive and distributed database systems. A surcharge is required. CSC 746 HPC (units: 3) HPC principles and current practices. Basics for multiprocessor systems, such as clusters and graphics processors. Message delivery and shared memory-based software development. Cloud computing. CSC 775 Introduction to database systems (units: 3) Languages of the relation query. Semantic data models. Logical and physical database design. Privacy issues. Application techniques (directories, query optimization, competition control, security, and integrity enforcement). A surcharge is required. (CSC 775/CSC 675 is related to course offer. Students who complete the course at one level shall not repeat the course at another level.) CSC 780 Developing applications for mobile devices (Items: 3) Introduction and comparison of different popular mobile app frameworks. Conceptual and practical experience in writing mobile applications using local and cross-platform tools. (Only plus-minus class) (CSC 780/CSC 680 is associated with course offer. Students who complete the course at one level shall not repeat the course at another level.) CSC 810 Analysis of Algorithms II (Entities: 3) Review major design strategies and theory of NP-completeness. Convergence algorithms. Online algorithms. Parallel and dispersed algorithms. Algorithms for specific areas of interest. A surcharge is required. CSC 820 Natural Technologies (units: 3) Natural language screening technology and grammar. Elements of computational romance, discourse structure and generation. Study of related topics, such as obtaining information, answering questions, machine translation, and speech processing. A surcharge is required. (Only plus-minus class) (CSC 820/CSC 620 is related to course offer. Students who complete the course at one level shall not repeat the course at another level.) CSC 821 Biomedical Imaging and Analysis (Units: 3) Introduction to medical and biological imaging, imaging physics, 3D image formats and visualization. Digital image editing and analysis, filtering, registration, segmentation, quantification and performance evaluation. (Only plus-minus class) (CSC 821/CSC 621 is related to course offer. Students who complete the course at one level shall not repeat the course at another level.) CSC 825 Advanced Automata Theory (Units: 3) Advanced themes of theoretical computer science and their application in many areas, including bioinformatics, compilers, data and image compression, natural language processing, networking and web applications. A surcharge is required. (Only plus-minus class) CSC 830 Advanced Computer Graphics (Items: 3) List of graphics principles and scanning algorithms, pixel fill algorithms, anti-aliasing, cutting, embedded line and surface display, changing surfaces, and fractional techniques. A surcharge is required. CSC 831 Multiplayer game development (Items: 3) Computer graphics and network features for multiplayer games. Design and development of the game team project. (CSC 831/CSC 631 is related to course offer. Students who complete the course at one level shall not repeat the course at another level.) CSC 835 Distributed systems (units: 3) Introduction to concepts and design of distributed systems. Contains a term project when using current intermediate software technologies. A surcharge is required. CSC 837 Advanced Sound Synthesis (Units: 3) Current audio synthesis algorithms and practices and timbral control music, sound effects and interactive environments. Real-time software synthesis systems design. A surcharge is required. CSC 840 Software Metrics and Quality Assurance (Units: 3) Measurement and modeling in software engineering. Software performance evaluation methods. Techniques and tools to ensure the quality of the software. Software quality standards. Design and use software metric tools. A surcharge is required. (Only plus-minus class) CSC 841 Computer Performance Assessment (Items: 3) Computer performance analysis issues related to system design, selection, and setup. Modelling using models of stoic and operational queues. Methods for measuring workload characterisation, design and performance. Designing simulation models for computer systems. A surcharge is required. (Plus-minus (CSC 841/CSC 641 is related to course offer. Students who complete the course at one level shall not repeat the course at another level.) CSC 842 Human-computer interaction (Units: 3) Designing, implementing and assessing human and computer interfaces. Topics include interface devices, interface metaphors, communication styles, user-centered design, testing and quality assessment. A surcharge is required. (CSC 842/CSC 642 is related to course offer. Students who complete the course at one level shall not repeat the course at another level.) CSC 845 Advanced Computer Networks (Entities: 3) Design and application of network protocols and technologies on radio and mobile networks. Introduction to new designs, algorithms, protocols and applications on wireless and mobile networks. A surcharge is required. CSC 846 Systems Architecture (Units: 3) Principles of computer system architecture, with an emphasis on hardware and software interactions for large applications and performance design. A surcharge is required. (Only plus-minus class) CSC 847 Cloud and Distributed Computing Concepts and Applications (Units: 3) Infrastructure, Platform and Software as a Service. Includes cloud computing techniques, including virtualization, multi-leased and service-oriented architecture. Cloud storage capabilities such as NoSQL databases, emerging technologies such as containers and Kubernetes, parallel and distributed computing platforms, including MapReduce and Apache Sparc, and practical experiences in public clouds such as Amazoncloud and Google Cloud. (Only plus-minus class) CSC 848 Software Engineering (Units: 3) Practical methods and tools for SW engineering including organizational teamwork. (CSC 848/CSC 648 is related to course offer. Students who complete the course at one level shall not repeat the course at another level.) CSC 849 Search Engines (Items: 3) Introduction to indoor modern search engines. Methods and tools for reporting, store, and accessing text data. A surcharge is required. (Only plus-minus class) (CSC 849/CSC 649 is related to course offer. Students who complete the course at one level shall not repeat the course at another level.) CSC 850 Compiler Design (Units: 3) Designing and implementing compilers, including lexicon scanners, top-down and bottom-up parsers, superior grammar, symbol of table manipulation, LR (k) grammar, semantics routine, and code generators. CSC 852 Introduction to security and data privacy (entities: 3) Introduction to basic concepts of cybersecurity, cryptography, and data privacy. Practice different privacy mechanisms in databases and submit apps to many data analytics tasks. (CSC 852/CSC 652 [formerly CSC 650] is a paired course offer. Students who complete a course on one level may repeat the course on the second level.) CSC 856 Advanced Computer Architecture (Units: 3) Advanced Pipelines. Parallelism at the coaching level. Improved memory system design. Compiler techniques for performance. New technologies and applications. A surcharge is required. CSC 857 Bioinformatics Computing (Units: 3) a wide range of topics in computational biology such as practiced life sciences in the industry and leading research organizations. Provides the computational background necessary for participation in R&D. (CSC 857/CSC 657 is related to course offer. Students who complete the course at one level shall not repeat the course at another level.) CSC 858 Basics of Biotechnology and Life Sciences (units: 3) Basics of biotechnology and life sciences. Prepare for further study and career in biotechnology and life sciences and industry. CSC 859 AI clarifyability and ethics (entities: 3) Impact of AI on society and business. The need to clarify and identify ethical systems and related problems in current ai applications. Analysis and evaluation of technologies and methods for the design, development, evaluation and deployment of identified and ethical ai systems. (Plus-minus letter class, RP only) CSC 864 Multimedia systems (Items: 3) In-depth themes of multimedia such as the basics of image and video processing, compression, multimedia databases, standard, synchronization, formats, perspective systems, and algorithms. A surcharge is required. (Only plus-minus class) (CSC 864/CSC 664 is related to course offer. Students who complete the course at one level shall not repeat the course at another level.) CSC 865 Artificial Intelligence (units: 3) Overview of algorithms and approaches to Artificial Intelligence. Explore the basic concepts needed to achieve human-level intelligence in computer systems and gain experience in working with these concepts through tasks and programming exercises. Topics include problem-solving methods, heuristic search, game gaming, agent architecture, machine learning and various topics, selected knowledge representation, symbolic reasoning, computational models of virtual people, neural networks and genetic algorithms. A surcharge is required. (CSC 665/CSC 865 is related to course offer. Students who complete the course at one level shall not repeat the course at another level.) CSC 867 Internet Application Design and Development A surcharge is required. (CSC 867/CSC 667 is associated with course offer. Students who complete the course at one level shall not repeat the course at another level.) CSC 868 Advanced Object Oriented Software Design and Development (Entities: 3) Object-oriented analysis and design using UML, design patterns, frameworks and toolkits. Brisk design processes. Development of a mid-sized team programming project. (Only plus-minus class) (CSC 868/CSC 668 is associated with course offer. Students who complete the course at one level shall not repeat the course at another level.) CSC 869 Data Mining (Entities: 3) Knowledge discovery process, basic data mining concepts, basic mining algorithms, and data mining in practical areas such as bioinformatics. (Only plus-minus class) CSC 870 Calculated discrete geometry (Units: 3) A comprehensive overview of the main themes in computational discrete geometry, including production functions, complexity theory, curved hull, nearest neighbor problems and efficient algorithms. (This course is offered in mathematics 870 and CSC 870. Students must not repeat the course under an alternative prefix.) CSC 871 Neural networks (units: 3) Artificial neural networks, including associative memories, learning, search, databases, blurry set techniques, pattern recognition and adaptive processing. (CSC 871/CSC 671 is related to course offer. Students who complete the course at one level shall not repeat the course at another level.) CSC 872 Pattern Analysis and Machine Intelligence (Units: 3) Foundation Pattern Analysis and Machine Intelligence. Artificial intelligence: agent, logic and search. Machine learning: Bayes classification. Neural network: simulated annealing. Shooting: Segmenting a picture and identifying objects. (Only plus-minus class) CSC 874 Big Data Analysis (Entities: 3) Introduction to current topics of data science and big data analysis. (Only plus-minus class) CSC 875 Advanced themes in database systems (entities: 3) Advanced aspects of selected topics in database systems. A total of 6 units may be repeated. CSC 876 Soft Computing and Decision Support Systems (Units: 3) Development of software systems decision support, including applications for soft computing. Topics include a vague set, vague logic, blurred systems, vague judgment, vague reasoning, approximate reasoning, possible theory, rough determination, sorted assessment logic, logic aggregation operators, information fusion models, decision-making methods, word data processing, perceptual calculation, granular calculation, and LSP method for evaluating and optimizing complex systems. (Only plus-minus class) (CSC 876/CSC 676 is related to course offer. Students who complete the course at level shall not repeat the course at another level.) CSC 890 Graduate Seminar (Units: 3) Explore the various current advanced research trends in Computer Science. Topics to be specified in the class schedule. Can be repeated in a total of 6 units if the themes differ. (Only plus-minus class) CSC 893 Supervised industrial research (unit: 1) Instructed on computer science employment in software research and development. The objectives are and work experience. A total of 3 units can be repeated. It can then be repeated on a cr/nc basis. Must be approved by a postgraduate counselor. (Minus letter class, CR/NC, RP) CSC 895 Applied Research Project (Units: 3) (CR/NC grading only) CSC 897 Research (Units: 3-6) Independent and preliminary investigation under the supervision of a faculty member. A total of 6 units may be repeated. (Minus letter class, CR/NC, RP) CSC 898 Master's thesis (Units: 3) (CR/NC grade only) CSC 899 Independent Study (Units: 1-3) Special study of a specific problem in the management of faculty member. The staff of the department must be provided with a written and detailed report on the work carried out. A total of 6 units may be repeated. (ab/c only)